



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,199	07/14/2003	Todd C. Adelman	200310022-1	6368

7590 06/14/2007
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

GOMA, TAWFIK A

ART UNIT	PAPER NUMBER
----------	--------------

2627

MAIL DATE	DELIVERY MODE
-----------	---------------

06/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/619,199	ADELMANN, TODD C.	
	Examiner	Art Unit	
	Tawfik Goma	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to the RCE filed on 3/28/2007.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim recites the limitation "each storage cell sized to represent only a single data bit." However, the specification describes the cells to have a size capable of holding at least two perturbations formed in each cell, which is contradictory to the limitation of requiring a cell *sized* to represent only a single data bit. Although the plural perturbations in the same cell may be representative of only one data bit due to their redundant nature, the size of the cell as described in the specification is for holding at least two perturbations or two data bits within the cell.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 recites the limitation "the redundant perturbations" in line 5. There is insufficient antecedent basis for this limitation in the claim. The claim is interpreted to recite "the plural perturbations," as in claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 3-8, 10-11, 14-17, and 19-21 are rejected under 35 U.S.C. 102(a) as being unpatentable over Gibson (US 6507552).

Regarding claims 1, 14 and 19 Gibson discloses a storage device, system and method comprising: a probe (220, fig. 4b) having plural tips (225, 230, fig. 4b); and a storage medium having a surface in which storage cells (130, fig. 4b) are to be formed (fig. 1), each storage cell sized to represent only a single data bit (130, 140, fig. 1), the plural tips of the probe to form plural perturbations in the surface in at least one of the storage cells for representing a data bit (fig. 1 and fig. 4b). Gibson discloses wherein the plural tips of the probe are used to form a perturbation in each storage cell and that plural perturbations are formed in plural cells, which reads on the claim because the claim requires that plural perturbations are formed in the surface *in at least one* of the storage cells. That is, for example, two perturbations formed by the probe in two cells, with each cell having one perturbation, reads on the claim.

Regarding claims 3 and 15, Gibson further discloses wherein the probe comprises a cantilever with the tips attached to and extending outwardly from the cantilever (110, fig. 4b)

Art Unit: 2627

Regarding claim 4, Gibson further discloses wherein the probe is adapted to scan the perturbations of the at least one storage cell with at least one of the tips to detect a state of the data bit as being either a logical "0" or logical "1." (col. 1 lines 22-32)

Regarding claim 5, Gibson further discloses wherein presence of at least one perturbation in a storage cell represents a first state of the data bit, and absence of perturbations in a storage cell represents a second state of the data bit, the storage device further comprising a detector to indicate that the at least one storage cell contains a data bit at the first state in response to the probe detecting at least one of the redundant perturbations (col. 1 lines 22-32).

Regarding claim 6 and 20, Gibson further discloses a second probe, the second probe having plural tips to form plural perturbations in the surface in another storage cell to represent a second data bit (350, fig. 1).

Regarding claim 7 and 17, Gibson further discloses wherein the probe is part of an array of probes; each probe in the array of probes having plural tips (fig. 1 and col. 7 lines 21-27).

Regarding claim 8 and 21, Gibson further discloses a substrate in which the probe is formed (360, fig. 1); and an actuator to move at least one of the substrate and the storage medium to adjust relative positions of the substrate and the storage medium (col. 7 lines 39-48).

Regarding claim 10, Gibson further discloses wherein the tips (180, 170, fig. 4a) of the probe (160, fig. 4a) are in contact with the surface of the storage medium to form the perturbations (col. 9 lines 22-25).

Regarding claim 11, Gibson further discloses wherein the tips (180, 170, fig. 4a) of the probe (160, fig. 4a) are heated to form dents in the surface, the perturbations comprising the dents (col. 9 lines 29-37 and col. 8 lines 3-8).

Regarding claim 16, Gibson further discloses wherein the probe is adapted to read the two perturbations of the at least one storage cell with at least one of the tips to detect a state of the data bit (col. 7 lines 39-43). Gibson discloses wherein two of the data bits can be read by two of the tips, which reads on the claimed language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 9, 12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson (US 6507552) in view of Albrecht et al (US 2003/0218960).

Regarding claims 2, 9 and 18, Gibson further discloses wherein the probe is adapted to form plural groups of perturbations on the surface of the storage medium to write plural data bits in respective storage cells, and the actuator is adapted to scan the probe over the plural groups of perturbations to read the data bits (fig. 1 and col. 1 lines 22-53). Gibson fails to disclose wherein the groups of data bits are redundant data bits. In the same field of endeavor, Albrecht discloses recording redundant data bits (fig. 4 and pars. 109 and 143). It would have been obvious to one of ordinary skill in the art to modify the recording system disclosed by Gibson with the method of recording

Art Unit: 2627

redundant data as taught by Albrecht. The rationale is as follows: One of ordinary skill in the art at the time of the applicant's would have been motivated to provide redundant data in order to account for random disturbances (see Albrecht par. 143).

Regarding claim 12, Gibson further discloses wherein fewer than all of the tips of the probe are in contact with the surface of the storage medium to perform a read (fig. 4b and).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gibson (US 6507552) in view of Miyazaki et al (US 5412597).

Regarding claim 13, Gibson further disclose wherein the probe comprises a cantilever to which the tips are attached, the cantilever being actuated to different positions to engage the fewer than all of the plural tips of the probe to contact the surface of the storage medium (110, fig. 4b and fig. 1). Gibson fails to disclose wherein the cantilever is actuated to a slanted position. In the same field of endeavor, Miyazaki discloses actuating a cantilever to a slanted position to detect the slope of the recording medium (fig. 21). It would have been obvious to one of ordinary skill in the art to modify the actuator disclosed by Gibson with the operation disclosed by Miyazaki. The rationale is as follows: One of ordinary skill in the art at the time of the applicant's invention would have been motivated to actuate the cantilever to a slanted position in order to detect a slant of the recording medium (see Miyazaki, col. 23 lines 21-32).

Response to Arguments

Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2627

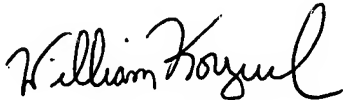
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

T. Goma
/Tawfik Goma/
6/6/2007


WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600